

COURSE DETAIL

DESIGN OF EXPERIMENTS

Country

Sweden

Host Institution

Lund University

Program(s)

Lund University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Statistics Mathematics Engineering

UCEAP Course Number

152

UCEAP Course Suffix**UCEAP Official Title**

DESIGN OF EXPERIMENTS

UCEAP Transcript Title

DESIGN EXPERIMENTS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This is a basic course in designing experiments and analyzing the resulting data. It is intended for engineers, physical/chemical scientists, and scientists from other fields such as biotechnology and biology. The course deals with the types of experiments that are frequently conducted in industrial settings. Its objective is to learn how to plan, design, and conduct experiments efficiently and effectively, and analyze the resulting data to obtain objective conclusions. Both design and statistical analysis issues are discussed. Opportunities to use the principles taught in the course arise in all phases of engineering and scientific work, including technology development, new product design and development, process development, and manufacturing process improvement. Applications from various fields of engineering (including chemical, mechanical, electrical, materials science, industrial, etc.) will be illustrated throughout the course. Topics include simple design with fixed and random effects. Simultaneous confidence intervals. Requirements for analysis of variance: transformations, model validation, residual analysis. Factorial design with fixed, random, and mixed effects. Additivity and interaction. Complete and incomplete designs. Randomized block designs, Latin squares and confounding. Regression and analysis of covariance. Admission requirements include [FMAA20](#) Linear Algebra with Introduction to Computer Tools or [FMAA21](#) Linear Algebra with Numerical Applications or [FMAB20](#) Linear Algebra or [FMAB22](#) Linear Algebra and [FMAB30](#) Calculus in Several Variables or [FMAB35](#) Calculus in Several Variables or [FMSF20](#) Mathematical Statistics, Basic Course or [FMSF25](#) Mathematical Statistics - Complementary Project or [FMSF32](#) Mathematical Statistics or [FMSF45](#) Mathematical Statistics, Basic Course or [FMSF50](#) Mathematical Statistics, Basic Course or [FMSF55](#) Mathematical Statistics, Basic Course or [FMSF70](#) Mathematical Statistics or [FMSF75](#) Mathematical Statistics, Basic Course or [FMSF80](#) Mathematical Statistics, Basic Course. Assumed prior knowledge: Basic mathematical statistics and programming experience.

Language(s) of Instruction

English

Host Institution Course Number

FMSF65

Host Institution Course Title

DESIGN OF EXPERIMENTS

Host Institution Course Details

https://kurser.lth.se/lot/course-syllabus/25_26/FMSF65

Host Institution Campus

Lund

Host Institution Faculty

Engineering

Host Institution Degree**Host Institution Department****Course Last Reviewed**

2025-2026

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